Judicael Brindel
Cotonou, Benin
March 12, 2026

To Enrico Fermi
(1901 – 1954)
Nobel Prize in Physics, 1938
University of Chicago

Dear Professor Fermi,

In 1950, over lunch at Los Alamos, you asked a question that has haunted physics for more than seventy years:

"Where is everybody?"

The universe is 13.8 billion years old. It contains hundreds of billions of galaxies. Each harbors hundreds of billions of stars. Many have planets. The conditions for life appear common. And yet — total silence. Not one signal, not one trace, not one visit.
You were right to hear that silence. I am writing to you from Cotonou, Benin, to offer an answer in two parts.

First answer: dark energy isolates everything

Since your death in 1954, cosmology has discovered something no one expected. In 1998, two teams observing distant supernovae found that the expansion of the universe is accelerating. An invisible energy — which we call dark energy — accounts for 68% of everything that exists, and it pushes space apart faster and faster.
The consequence is direct: galaxies beyond a certain distance are receding from us faster than light. Their signals will never reach us. The observable universe shrinks with time. Every civilization is locked inside a causally disconnected bubble, forever separated from the rest.
The silence you heard is not a mystery. It is physics doing its work. Dark energy separates, isolates, and eventually — in tens of billions of years — will tear everything apart into absolute silence. Civilizations do not need to disappear mysteriously. The universe itself separates them irremediably.

Second answer: the Chaining Force imposes a threshold

I have independently developed a speculative theory I call the *Chaining Force* — an organizing force that drives matter toward complexity over time. Its equation of motion is:

$$\Box\phi + \frac{2GM}{r}\phi = \tau \cdot \xi(x,t) \tag{1}$$

where τ is the age of the structure and ξ is a stochastic field encoding the curvature of spacetime. This equation admits a critical age:

$$\tau_{\text{crit}}(r) = \frac{2GM}{r\sqrt{\langle \xi^2 \rangle}} \tag{2}$$

Beyond τ_{crit}, the accumulation of complexity becomes uncontrolled — the structure collapses on itself like an organizational black hole. A civilization that accumulates too much complexity too quickly reaches this threshold and collapses before emitting detectable signals.
Civilizations are therefore either too young — still below the threshold, invisible — or too old — collapsed beyond it. The window of detectability is narrow. The silence is not the absence of life. It is the dynamics of the Chaining Force.

Conclusion

You were asking the right question. The universe most probably contains other civilizations. But two combined physical mechanisms explain the silence:

1. Dark energy locks each civilization inside a causally closed bubble. Distances become insurmountable. Signals do not arrive.

2. The Chaining Force imposes τ_{crit} — a threshold beyond which civilizations collapse before becoming detectable.

The silence you heard is real. But it is not proof of humanity's solitude. It is the signature of physics operating at the cosmological scale.

I am writing to you from a small city on a small planet in an ordinary arm of the Milky Way. Tonight I looked at the Milky Way for the first time knowing what I was looking at. That white band in the sky I had seen since childhood — it is billions of stars, black holes, void, and somewhere at the center, Sgr A*, the black hole I calculated tonight.
You asked your question from Los Alamos in 1950. I answer you from Cotonou in 2026. The universe is vast, and it separates us. But questions cross time.

Respectfully,

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March 12, 2026

References: Chaining Force (preprint, 2026) — Penetron Conjecture, Zenodo, DOI: 10.5281/zenodo.18990284 — Symbolic Arithmetic of Physical Constants, Zenodo, DOI: 10.5281/zenodo.18873054